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REMARKS

The application has been reviewed in light of the final Office Action dated January 15, 2008. Claims 1-3 and 5-23 are pending. By this Amendment, claims 1, 21 and 22 have been amended to clarify the claimed subject matter. Accordingly, claims 1-3 and 5-23 are presented for reconsideration, with claims 1, 21 and 22 being in independent form.

Claims 1-3 and 5-23 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over U.S. Patent No. 5,713,358 to Mistretta et al. in view of Ho et al. (US 2002/0087069 A1).

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1, 21 and 22 are patentable over the cited art, for at least the following reasons.

This application relates to an improved approach devised by applicant utilizing magnetic resonance imaging (MRI) techniques wherein measurement data (k space data) of arterial phase is extracted easily (and instantaneously) after imaging a plurality of time phases including the arterial phase and its image can be displayed. Dynamic measurement is thereby carried out using a means for extracting the time phase evaluation values (for example, the origin data in k space) in respective time phases and then automatically extracting a data set including a time phase where the time phase evaluation value reaches a specified threshold value.

In an aspect of this application is divided into a high repetitive-frequency measurement area containing an origin of the k space and measured at a high frequency and a plurality of low repetitive-frequency measurement areas not containing the origin and measured at a low repetitive-frequency, and k space data is obtained by repeating measurement of the high repetitive-frequency measurement area and measurement of at least one of the low repetitive-frequency measurement areas between the measurements of the high repetitive-frequency

measurement area in a predetermined measurement order. In addition, a time phase evaluation value is acquired from the high frequency measurement area, and a time phase is determined at which the time phase evaluation value reaches a predetermined threshold value or greater. Further, the predetermined measurement order of some of the measurement areas is rearranged in such a manner that a measurement period of the high repetitive-frequency measurement area contains the time phase. Each of independent claims 1, 21 and 22 addresses these features, as well as additional features.

Mistretta, as understood by Applicant, proposes an approach for increasing the temporal rate at which MR (magnetic resonance) images can be acquired during a dynamic study. The approach proposed by Mistretta entails repeatedly acquiring samples from a selected k-space during a dynamic study, sampling a central region of the selected k-space at a higher temporal rate than the sampling of surrounding k-space regions during the dynamic study, forming a data set for each set of central region k-space samples which includes the central region k-space samples and samples derived from the most temporally adjacent samplings of the surrounding k-space regions, and reconstructing an MR image from each of the data sets to produce a sequence of images at the higher temporal rate..

Mistretta does not disclose or suggest controlling the measurement order so that the high frequency area contains the time phase.

In addition, Mistretta fails to disclose or suggest using data from the measurement areas an order of which is ***rearranged from a predetermined measurement order in such a manner that a measurement period of the high repetitive-frequency measurement area contains a desired time phase***.

He, as understood by Applicant, proposes an approach for generating peripheral MR

angiographic images and performing an MRA (magnetic resonance angiography) examination using an intravascular contrast agent in which MR data acquisition is optimized in the most distal stations in a multi-station acquisition. The approach proposed by Ho includes administering a contrast agent into the blood stream of the patient, acquiring low spatial resolution MR images of the arterial vasculature, and tracking the passage of the contrast agent through the patient. The patient table is moved in response to the tracking, and acquisition of low spatial resolution images is continued at each of the proximal stations until the most distal station is reached where a high spatial resolution image data set is then acquired of preferentially arterial vascular structures. Higher spatial resolution images are then acquired in the proximal stations.

It is contended in the Office Action that Ho, [0037] through [0041], proposes controlling the measurement sequence based on the timing predicted.

However, Ho does not refer to "measurement sequence" at all. Moreover, if Ho proposes changing acquisition time on-the-fly based on the contrast bolus, as contended in the Office Action, such proposed change may change start timing of pulse sequence to be applied, but is not synonymous, nor renders obvious, with rearranging the measurement order of the measurement areas (in k space), as provided by the claimed subject matter of the present application.

More specifically, the claimed subject matter of the present application provides for rearranging (while repeating measurement of measurement area) the predetermined measurement order of at least some of the measurement areas (see, for example, Fig. 2 of the present application) in such a manner that a measurement period of the high repetitive-frequency measurement area contains the time phase based on a predetermined threshold value.

Such approach (as provided by the claimed subject matter of the present application) enables k space data of desired time phase to be acquired easily and instantaneously so that an

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image, at the desired time phase, reflecting the status of the patient can also be obtained easily and instantaneously.

The cited art, even considered along with common sense and common knowledge of one skilled in the art, simply does not render obvious such features of the claimed subject matter (independent claims 1, 21 and 22).

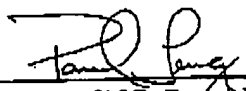
Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1, 21 and 22, and the claims depending therefrom, are patentable over the cited art.

In view of the remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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